

**Remarks/Arguments:**

Claims 1-16 are pending and rejected in the Application. Claims 1-14 and 16 have been amended. New claim 17 has been added. No new matter has been added.

On page 2, the Official Action rejects claims 7-16 under 35 U.S.C. § 112, second paragraph as being indefinite. Applicants have therefore amended the claims to address the indefinite language identified by the Examiner. Withdrawal of the rejection is respectfully requested.

On page 3, the Official Action rejects claims 1, 2 and 4 under 35 U.S.C. § 103(a) as being unpatentable over Lane (U.S. Patent No. 6,542,611) and Takechi (U.S. Patent No. 7,126,642). It is respectfully submitted, however, that the claims are patentable over the art of record for at least the reasons set forth below.

Applicants' invention, as recited by claim 1, includes features which are neither disclosed nor suggested by the art of record, namely:

**a control signal detecting section to identify (1) a type of each of the control signals, (2) an identifier for uniquely specifying each control signal, and (3) a time of a detection of one of the control signals;**

Claim 1 relates to the detection of control signals. Specifically, various kinds of devices used in a broadcast station output various kinds of control signals. These control signals may then be detected. During detection, the type of each control signal (e.g. microphone signal), an identifier for uniquely specifying each control signal (e.g. microphone A) and the time of detection of each control signal (e.g. 8:00pm) may be identified. Support for these features can be at least found on pages 11-16 of the specification and furthermore shown in Figs. 2-6. No new matter has been added.

In Fig. 1, Lane discloses a system including a microphone 12, transmitter 20, headphones 18, receiver 14 and echo suppressor 10. During operation, a user who is remotely located from a broadcast studio speaks into microphone 12. The user's voice is then transmitted by transmitter 20 to the broadcast studio. Once the broadcast studio transmits a signal back, it is received via antenna 16 and receiver

14. The received signal is then fed to headphones 18 where the user is able to hear the broadcast. In headphones 18, however, an unwanted echo of the user's original voice may be heard. Specifically, Lane is directed to cancelling out the echo so that it is not heard in headphones 18 by the user. In Col. 5, line 50 to Col. 6, line 60, Lane suggests that an adaptive filter is utilized to cancel out the echo signal (*"DSP echo correlator and suppressor consists of various signal processing routines that identify a correlation (both delay time and level) of local audio signal to its echo in return audio signal, and cancel the echo from the received return audio signal. More particularly, the DSP echo correlator and suppressor routines implement an adaptive transverse finite impulse response(FIR) filter"*). Thus, when the echo is received at a time, it is cancelled out of the audio signal by the FIR filter. Thus, Lane can determine the delay time between the voice uttered by the viewer and the returning echo.

Lane, however, does not suggest detecting control signals (Lane does not suggest any control signals, only voice signals). Furthermore, Lane does not suggest identifying a type of a control signal, an identifier of a control signal and a time of detection of a control signal.

Applicants' claim 1 is different than the art of record, because a control signal detecting section is able to identify: the type of the control signal, an identifier for specifying the control signal and a time of detection of the control signal (*"a control signal detecting section to identify (1) a type of each of the control signals, (2) an identifier for uniquely specifying each control signal, and (3) a time of a detection of one of the control signals"*).

As shown in Applicants' Fig. 2, broadcast studio 1 includes various kinds of devices such as microphones 20 and cameras 30. The conditioning booth 2 includes voice selecting switch 18, camera selecting switch 15 and various other switches which are connected to control signal detecting section 12. Thus, for example, when a user speaks into one of the microphones or is being videotaped by one of the cameras, the switches send a control signal to control signal detecting section 12.

Based on the control signals sent to control signal detection section 12, at least 3 parameters of the control signals may be identified. Specifically, the

parameters include: the type of control signal, an identifier uniquely specifying the control signal and a time of detection of the control signal. For example, if a user speaks into microphone 2 at 8:00 p.m., the voice selecting switch sends a control signal to control signal detecting section 12. Control signal detecting section 12 then determines that the **type of control signal is a microphone signal**. Control signal detecting section 12 also **specifically identifies that the control signal is from microphone number 2 (PM-2)**. Furthermore, the control signal detecting section identifies the **time that the control signal was detected as 8:00 p.m.** These features are furthermore shown in Figs. 5 and 6. Specifically, in Fig. 5, the control signal includes a header part 200 where the former eight bits indicate the type of control signal (type of device) and a latter eight bits indicate an identifier (a specific device). Examples of the signal type information and identifier information are shown in the chart of Fig. 6 where the first three entries have the same type (microphone) but have unique identifiers (PM-1, PM-2 and PM-3).

These features are also supported on pages 16 and 25 of the specification (*"since the former eight bits of the header part 200 showing the signal type information are ... control signal type managing section 122 judges that the item ... 211 is a "pin microphone" and further since the latter eight bits are ... control signal type managing section ... judges that the item ... is "PM-1" ... control signal type managing section 122 judges that the type of the input control signal is "pin microphone" and the identifier thereof is "PM-1" and notifies the control signal type identifying section 121 ... the index generation requesting section 122 inquires the present time from the time obtaining section 125 and obtains the time as 13. The index generates in requesting section 124 following the acquisition of the type, the identifier, and the time of the voice control signal, sends them to the index generating section 13"*).

Takechi is relied upon for disclosing a VCR. Takechi, however, does not make up for the deficiencies of Lane. Thus, independent claim 1 is patentable over the art of record for at least the reasons set forth above.

Independent claims 2 and 4 include similar features to claim 1. Thus, claims 2 and 4 are also patentable over the art of record for at least the reasons set forth above with respect to claim 1.

On page 4, the Official Action rejects claim 3 under a combination of Lane and Asmussen (U.S. Patent No. 7,293,279). Asmussen is relied upon for operating the control signal of a VCR. Asmussen, however, does not make up for the deficiencies of Lane. Independent claim 3 includes similar features to independent claim 1. Thus, independent claim 3 is also patentable over the art of record for at least the reasons set forth above with respect to claim 1.

On page 5, the Official Action rejects claims 5-16 under a combination of Lane and Engebretson (U.S. Patent No. 5,724,433). Engebretson is relied upon for having a control signal which is transformed to log encoded data. Engebretson, however, does not make up for the deficiencies of Lane. Dependent claims 5-16 include all of the features of independent claims 1-4 from which they depend. Thus, claims 5-16 are also patentable over the art of record for at least the reasons set forth above with respect to claim 1.

Dependent claim 17 is directed to the control signal detecting section determining a start time of a control signal and an end time of a control signal. These features are at least supported on pages 25-27 of the specification. No new matter has been added. Lane is also deficient in suggesting a start time and end time of a control signal. Thus, claim 17 is also patentable over the art of record for the reasons set forth above.

In view of the amendments and arguments set forth above, the above-identified application is in condition for allowance, which action is respectfully requested.

Respectfully submitted,

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